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| 10/021,902 | 12/17/2001 | David Thiede | 737.011US1 | 1988 |

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EXAMINER

WILLIAMS, THOMAS J

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|----------|--------------|
| ART UNIT | PAPER NUMBER |
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3683

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/021,902

Applicant(s)

THIEDE ET AL.

Examiner

Thomas J. Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34, 42, 44 and 45 is/are rejected.
- 7) ☒ Claim(s) 35-41 and 43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 4, 6-8, 12-14, 19, 23-28, 31-34, 42, 44 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by US 3,519,805 to Throne-Booth.

Re-claim 1, Throne-Booth discloses a system comprising: a processor 10 coupled to a vehicle 16; a brake controller is coupled to the processor (column 1 line 43; it is disclosed that signals from the computer control the vehicle deceleration, see column 6 lines 70-75); a first range detector is coupled to the processor (a position sensing device is considered a range detector, see column 1 lines 49-50); the processor executes instructions to operate the brake controller to selectively apply and release a brake of the vehicle based on a comparison of a deceleration profile with range data from the first range detector and a speed of the vehicle, column 1 lines 46-68 and column 2 lines 63-68 to column 3 lines 1-22.

Re-claims 3 and 4, the tachometer provides speed information of the vehicle to the processor, tachometers are generally coupled to a speedometer.

Re-claims 6 and 7, the use of wheel speed sensors as vehicle speed sensor is well known in the art, in addition wheel speed sensors are a form of tachometers since both measure a speed of rotation; coupling wheel speed sensors to a trailer wheel or a tractor wheel is well known in

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the art especially with vehicles equipped with anti-lock brake systems, thus providing a means of ascertaining accurate vehicle speed.

Re-claim 8, Hall effect sensors are one well known form of wheel speed sensors, wheel speed sensors are generally connected to the processor.

Re-claim 12, the advance of the vehicle towards a desired stopped position is broadly viewed as a vehicle direction data or information, the processor receives all the information generated.

Re-claim 13, a movement of the vehicle is determined by the tachometer of Thorne-Booth. It is well known in the vehicle arts to use a Hall effect sensor as a wheel speed sensor, which is categorized as a tachometer. Both sensor are designed to measure speed of rotation.

Re-claim 14, Throne-Booth discloses a method comprising: receiving distance data from a range detector based on a distance between a vehicle and an obstacle; receiving speed information; generating a correction signal based on a comparison of the distance data and speed information with a deceleration profile; and modulating a vehicle brake based on the correction signal, see summary and column 4 lines 63-75 to column 5 lines 1-18.

Re-claim 19, the advance of the vehicle towards a desired stopped position is broadly viewed as a vehicle direction data or information.

Re-claim 23, a wheel speed sensor fall into a category of tachometer, which are devices that detect rotational speed.

Re-claim 24, a wheel speed sensor or tachometer measure distance over time, in essence distance data is included in the data received from a wheel speed sensor.

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Re-claim 25, a well known method of modulating brake pressure includes pulsing the brake valves, specifically dump valves and application valves. This process is well known in the ABS arts.

Re-claim 26, Throne-Booth discloses a method comprising: receiving speed information from the vehicle, such as from a tachometer; receiving obstacle information from a sensor coupled to the vehicle, such as distance to a predetermined stopping position d1; determining a deceleration profile based on speed information and the obstacle information, see figure 1; modulating a brake system of the vehicle based on the deceleration profile.

The instant invention is viewed as nothing more than a system designed to modulate the brake pressure of a vehicle, thus bringing the vehicle to a desired stop position relative to the obstacle. The prior art of Throne-Booth discloses a system designed to modulate the brake pressure, thus altering the deceleration of the vehicle, so as to bring the vehicle to a desired stop position relative to an obstacle.

Re-claim 27, a data bus is defined by the examiner as an information line between the sensor (such as wheel speed sensor 14) and the processor 10, see figure 3.

Re-claim 28, the speed information includes a signal received from a wheel speed sensor 14. A wheel speed sensor can be defined as a tachometer 14, both measure speed of rotation.

Re-claims 31-33, common vehicle brake components include dump valves and hold valves which are normally controlled by electrical signals. Thorne-Booth discloses that the system is designed for use with standard brake equipment, many vehicles are equipped with brake systems having dump valve and hold valves, such systems are well known in the art.

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Re-claim 34, Throne-Booth discloses a method comprising: receiving an electronic speed signal (from tachometer) for a vehicle; a direction signal (such as changing distance to a stop position); an electronic condition signal for the vehicle (such as deceleration); and modulating a brake system of the vehicle to restrict vehicle movement based on the speed signal, the direction signal, and the condition signal.

Re-claims 42, 44 and 45, Thorne-Booth discloses a modulation in brake pressure, indicated by an ability to change the vehicle deceleration, thus a reduced deceleration is achieved by a reduction in brake pressure or release of a brake in the brake system.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 2, 9-11, 15-18, 20-22, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thorne-Booth in view of US 5,734,336 to Smithline.

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Re-claim 2, Thorne-Booth is silent regarding the specific type of range detectors utilized in the vehicle stopping apparatus. Smithline teaches a range detector having a transmitter and a wireless receiver coupled to the processor. It would have been an obvious matter of design choice to have provided the range detector and processor of Thorne-Booth with a transmitter and wireless receiver as taught by Smithline, since wireless systems are easily retrofitted to existing vehicles. The use of wireless transmission systems is considered a design choice, that would have reduced labor requirements during attachment to the vehicle as well as a reduction in weight attributed to the wires.

Re-claims 9-11, 15-18, 20-22, 29 and 30, Thorne-Booth is silent regarding the use of a plurality of range detectors facing different directions, or the types of detectors used (such as radar and ultrasonic). Each of these range detecting devices is well known in the art as illustrated by Smithline. Furthermore, the use of a plurality of devices facing different directions is taught by Smithline. It would have been an obvious matter of design choice for one of ordinary skill in the art to have incorporated the use of a plurality of sensing devices in the apparatus of Thorne-Booth as taught by Smithline, thus enabling the system to avoid unwanted contact with any surrounding object. The specific type of range device used at each position is considered a design choice. The artisan will identify and use the best type of range detector based upon the requirements at that position.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thorne-Booth in view of US 3,918,058 to Noyori et al.

Thorne-Booth fails to teach the use of a Doppler radar sensor as the vehicle speed sensor. Noyori et al. teaches a speed sensor that utilizes the Doppler effect. It would have been an

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obvious matter of design choice for one of ordinary skill in the art to have utilized a Doppler radar sensor to detect vehicle speed in the apparatus of Thorne-Booth as taught by Noyori et al., the Doppler radar sensor system is functionally equivalent to a wheel speed sensor.

Response to Arguments

7. Applicant's arguments with respect to claims 1-41 have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's arguments filed February 26, 2003 have been fully considered but they are not persuasive.

With regards to claim 2, the teachings of Smithline illustrate that it is known in the art to use transmitters attached to vehicle sensors and wireless receivers attached to computer processors. It is apparent to the examiner that such a system will inherently reduce the need for extensive wiring between the sensors and processors. This will reduce the setup time required for the onboard sensing systems as well as reduce the overall weight attributed to the wires themselves. A reduction in weight will improve gas mileage, which is always a concern in the automotive industry.

With regards to claim 5, Noyori et al. is merely relied upon as a teaching reference for the use of a Doppler radar sensor as a means of determining vehicle speed, column 1 lines 57-58. It is believed that one of ordinary skill in the art will recognize a number of methods by which one can determine vehicle speed and use the method they feel is most applicable. The means by which this is accomplished is known to those of ordinary skill in the art and is not relevant to the claim language.

Allowable Subject Matter

9. Claims 35-41 and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

The issue of modulating the brakes as opposed to actuating the brakes is considered new issues. Modulation clearly requires a change in brake pressure as opposed to mere application of brake pressure.

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is (703) 305-1346.

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The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder, can be reached at (703) 308-3421. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7687.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

TJW

May 16, 2003


JACK LAVINDER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600